

Harry Potter

A HISTORY OF MAGIC



*A JOURNEY
THROUGH*

Potions &
Herbology

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Potions & Herbology

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CONTENTS

POTIONS

Part 1: From Apothecaries to Cauldrons

Part 2: Leechbooks and Bezoar Stones

Part 3: The Philosopher's Stone - An Alchemist's True Calling



HERBOLOGY

Part 1: Greenhouses, Gardening Tools and some 'Herbals'

Part 2: Flower Pressing, Flower Temples and Stink Lilies

Part 3: Mandrakes and Gnomes



INTRODUCTION TO THE SERIES

The history of magic is as long as time and as wide as the world. In every culture, in every age, in every place and, probably, in every heart, there is magic.

This series of eBooks will reveal the world of magic and unlock its secrets. It will go back thousands of years. It will travel to the far corners of the world. It will reach the stars. It will explore under the earth. It will decipher mysterious languages. We'll encounter some of the most colourful characters in history. We'll discover the curious incidents and truth behind legends. We'll see how, in the quest to discover magic, practitioners laid the foundations of science.

This series, structured around lessons from the Hogwarts curriculum, will show how this long and rich history has nourished the fictional world of Harry Potter.

The starting point for these eBooks was the exhibition *Harry Potter: A History of Magic*, which opened at the British Library in October 2017, twenty years after *Harry Potter and the Philosopher's Stone* was first published in the UK in 1997. For the exhibition, curators spent over a year searching through the 150 million items that the British Library holds to find the most magical. Then they sourced special artefacts to be loaned from other notable institutions. In October 2018, the New-York Historical Society took on the British Library exhibition, adding books and

artefacts from their own collection, as well as other fascinating loans.

This series of four eBook shorts contains worldly wonders from both exhibitions, exploring J.K. Rowling's magical inventions alongside their cultural and historical forebears. Throughout are links between ours and the wizarding world, told through extraordinary stories from the history of magic.



POTIONS

'As there is little foolish wand-waving here, many of you will hardly believe this is magic. I don't expect you will really understand the beauty of the softly simmering cauldron with its shimmering fumes, the delicate power of liquids that creep through human veins, bewitching the mind, ensnaring the senses... I can teach you how to bottle fame, brew glory, even stopper death — if you aren't as big a bunch of dunderheads as I usually have to teach.'

Professor Snape — *Harry Potter and the Philosopher's Stone*

We all know that Harry became a dab hand at Potions with a little help from the Half-Blood Prince; this was a fictional example of the handing down of knowledge over the centuries when it comes to mystical brews. Potions have been made for thousands of years – associated with bubbling pots and mysterious ingredients, they have been brewed to make medicines, drugs and poisons.

Alchemists dabbled a lot in potions, as well as making the legendary Philosopher's Stone, which could reportedly transform base metal into gold and held the key to everlasting life. Potions can even be concocted to conjure different weather events. Their use in the community was

well established, which has been proven by the medical books handed down through history, advocating their use.

Medieval apothecaries greatly contributed to the development of medical science; it is an art still practised to some extent in the pharmacies of today. Snape made Potions sound scary (he would, wouldn't he?), but it's also a fascinating subject.



PART 1: FROM APOTHECARIES TO CAULDRONS

Then they visited the Apothecary, which was fascinating enough to make up for its horrible smell, a mixture of bad eggs and rotted cabbages. Barrels of slimy stuff stood on the floor; jars of herbs, dried roots, and bright powders lined the walls; bundles of feathers, strings of fangs, and snarled claws hung from the ceiling.

Harry Potter and the Philosopher's Stone

When Harry and Hagrid visited the apothecary in Diagon Alley, they were met with an assortment of 'slimy stuff', herb jars, roots, powders, feathers and claws. Historically, an apothecary served as a sort of chemist or pharmacist, and texts recording symptoms and prescriptions have been found originating in the ancient societies of China, Babylon and Egypt.

Apothecaries kept guides for supplying remedies. If you walked into an apothecary shop with a cough, migraine or headache, the owner would open their book of secrets. In a typical 14th-century manuscript, there would have been a lot of illustrations and recipes, which would point to lots of ingredients from the natural world. People from the Middle Ages had a much closer working relationship with these natural ingredients than we do today.

One such manuscript once belonged to King Henry VIII of England, an avid book collector, and was eventually acquired by the physician and collector Sir Hans Sloane, the man after whom Sloane Square in London is named. Because it would have cost so much to make the book originally, it would have been rarely opened but kept instead as a valuable possession, probably belonging to a monastery and other wealthy individuals before ending up in the royal collection.

The manuscript was beautifully made, coloured with a combination of reds, golds and a dark yet vibrant blue pigment – one of the illustrations within it depicted the apothecary consulting with a client. The client sits while the apothecary stands, conveying the higher status of the customer. But apothecaries themselves were high status – at the top of the tree in society alongside lawyers and property owners. They were wealthy, too.



It turned out that Hagrid knew quite as much about unicorns as he did about monsters, though it was clear that he found their lack of poisonous fangs disappointing.

Harry Potter and the Goblet of Fire

One magical being strongly associated with apothecaries from the Middle Ages was the unicorn. It was not unusual to see spectacular signs hanging outside apothecary shops in the shape of a unicorn's head.

One such sign, dating from the 18th century, now resides at the Science Museum in London. Probably from England or the Netherlands, the unicorn's head is carved from oak. It appears happy, healthy and alert, with a hint of a smile and a bit of a goatee.

Extravagant shop signs were common in cities like London. They acted like logos and were an early form of branding, as well as being a useful way of navigating the streets when much of the population was illiterate. The result was streets festooned with an array of gaudy and memorable signs made from heavy wood and wrought iron, in the shape of giant frying pans, keys and coffins.

The health-and-safety conscious might spot a potential problem here, and on one particularly stormy night in London in 1718, this problem was brought home to the population. The powerful gusts of wind that whistled down the city's streets caused a huge shop sign in Bride Street in the Spitalfields area of the city to collapse – four people were killed.

This was one incident of many, but it seems that 18th-century London was slow to realise the potential dangers, because it wasn't until 1762 that a government commission was undertaken to see what they could do about it. It was decreed that signs had to be laid or mounted flat against buildings, which is why most shops and restaurants have signs like that now. Pubs proved to be an exception to the rule – luckily for the Leaky Cauldron!



Of course, the unicorn that was used to signpost the apothecary's shop wasn't real – but its horn was. Except for the fact that it was actually the tusk of a narwhal.

Narwhals are whales and are known as 'the unicorns of the sea' on account of the spiral pattern on their tusk and their rather elegant physical appearance (somewhere between a dolphin and a whale).

These 'unicorn horns' were rumoured to have unique medicinal powers – from curing leprosy to being a potent aphrodisiac. But most intriguingly, they were considered to be a universal antidote to poison. Right up until the 1780s, the French royal family had unicorn horn (in the form of a narwhal tusk) dipped into their drinks to proof the drink against poison.

Accordingly, the tusks were worth huge amounts of money and carried a lot of status. Queen Elizabeth I had

two, one of which was part of the Crown Jewels of the United Kingdom. From today's perspective, the idea of having a unicorn-horn cure might seem naïve, but even now most people don't know how their medicines work, or how they are chemically composed. In that sense, to the majority of people, taking unicorn horn would not have been that different to taking most medicines today – you take it, hope for the best and don't think twice about it when you get better.



'And the steam rising in characteristic spirals,' said Hermione enthusiastically, 'and it's supposed to smell differently to each of us, according to what attracts us, and I can smell freshly mown grass and new parchment and —'

But she turned slightly pink and did not complete the sentence.

Harry Potter and the Half-Blood Prince

One of the major figures in the Harry Potter series is the Potions master, Severus Snape, who contains many conflicting qualities and provokes a range of emotions: from fear to respect to pity. In *Harry Potter and the Half-Blood Prince*, a new Potions master takes the reins – the founder of the 'Slug Club' himself, Professor Horace Slughorn. In an early working draft of *Half-Blood Prince*, J.K. Rowling traded notes with her editor about a scene in which Hermione was impressing Slughorn with her knowledge of the love potion

Amortentia. Hermione was keen to show that she knew that it smelt differently to each person and that the smell depended on what attracted that person. She said she smelt freshly mown grass and new parchment, before she abruptly checked herself.

The other smell is never identified in the book, but it is implied these are smells that the subject loves. In 2007, J.K. Rowling revealed the unnamed Amortentia aroma that Hermione identified: the scent of Ron Weasley's hair.

In the real world, potions classes have been going on for a long time – hundreds of years, in fact. In the *Ortus sanitatis* ('The Garden of Health'), a famous medieval textbook, there is a woodcut of a potions class held in Strasbourg over five hundred years ago. It shows inattentive students gazing at stones in their hands in front of their tutor – not so different from a Potions lesson at Hogwarts!

This book is the earliest printed encyclopaedia of natural history, from 1491, but you might not recognise it as a typical reference book. In it, there are creatures we know, such as crocodiles, but also dragons, harpies and unicorns. The rivers it depicted contained both fish and mermaids and the book portrayed how the European scientific community saw the world in the late 15th century. It included plants and animals from the natural world and their medical uses, but also a world full of wonders and extraordinary creatures.

Whereas in previous eras copies of the book would be limited and shared among a privileged few, the relatively new Gutenberg printing press revolutionised how ideas were being spread in Western Europe and allowed those in the *Ortus sanitatis* to be distributed among a much wider sector of the population.

Print, like digital technology now, enabled information and knowledge to be standardised, set and disseminated faster than ever before. The more knowledge was shared, the more it was challenged, the more it was improved and the more the scientific revolution grew, especially during the

Enlightenment of the 18th century. We're sure Hermione would approve.



The instruments of the apothecary trade also stretch back through time – the pestle and mortar (these names come from the Latin words for 'pounding' and 'pounder') might be in use in your kitchen just as they were for the Aztecs, Sioux, Ancient Greeks and Celts. Their oldest use was recorded in Egyptian papyri from 1500 BC and, along with other kinds of herb grinders, they remain closely associated with pharmacies today.



Another tool of the trade is a place to store the ground results: apothecary jars. Apothecary jars from 17th-century Spain, with their hand-painted flower designs, are very beautiful and wouldn't look out of place at Hogwarts. Their

contents even sound as exotic as Felix Felicis and Amortentia:

- **Vitriol. Coerul.:** 'blue vitriol', or copper sulphate, which was used in dyes and by apothecaries to induce vomiting!
- **Ocul. Cancr.:** 'crab's eyes', really a stony mass taken from the stomach of a putrefied crayfish. Used – ironically enough – to ease stomach ache.
- **Sang. Draco.:** 'dragon's blood' (you might remember that in the Harry Potter stories Albus Dumbledore was an expert in dragon's blood), purportedly the blood of dragons or elephants, but actually a bright-red resin from a tree found in Morocco, Cape Verde and the Canary Islands, *Dracaena Draco* – the dragon tree. Used to treat ailments like haemorrhoids, as an ingredient in 18th-century toothpaste and today as a varnish for violins.



The next two days passed without great incident, unless you counted Neville melting his sixth cauldron in Potions.

Harry Potter and the Goblet of Fire

Perhaps the most famous depictions of potion-brewing are of witches bent over a flaming pot or a bubbling cauldron. One of the earliest images like this can be found in *De Ianiis et phitonicis mulieribu* ('On Witches and Female Fortune

Tellers') by Ulrich Molitor, in which the witches appear to be trying to summon a fearsome hailstorm. Molitor wrote his book in Cologne, Germany, following the collapse of a trial in which a woman called Helena Scheuberin was cleared of being a witch. Her prosecutor had been Heinrich Kramer, the author of an infamous witch-hunting manual, *Malleus maleficarum* ('The Hammer of the Witches').

Unconvinced of Kramer's claims and methods, Sigismund III, Archduke of Austria and Tyrol, commissioned Molitor as a top legal scholar to investigate and clarify the witchcraft issue. Molitor's view was that witches were dangerous, but only if they were in league with the devil, and were ultimately few and far between. Molitor was a moderate and he wanted to cool the atmosphere of paranoia and confusion around the issue of witches. *On Witches and Female Fortune Tellers* is written as a dialogue between Molitor and the archduke, and although the words urged calm, the illustrations pulled in the other direction. A woodcut of two old witches throwing a cockerel and a snake into a flaming cauldron, triggering a hailstorm which destroys crops, is the earliest printed depiction of witches using a cauldron.

Molitor's book was published in 1489, two years after Kramer's, and also became an influential bestseller, but not in the way it was intended. The images instilled fear in a largely illiterate public. The book remained in print for a hundred years, enough time to sear the trope of the witch and her cauldron into the popular imagination for ever after. When Hermione throws ingredients into a cauldron and begins to stir feverishly, it is an act continuing an artistic representation that has endured down the centuries.

Hermione threw the new ingredients into the cauldron and began to stir feverishly.

'It'll be ready in a fortnight,' she said happily.

Harry Potter and the Chamber of Secrets



That is not to say that cauldrons were never used before they were depicted in Molitor's book. One was recovered from the sludge of the River Thames in London when it was dredged in 1861 – amazingly, the artefact dated from between 800 and 600 BC. The 'Battersea Cauldron', as it came to be known (because it was found just downstream of Chelsea Bridge, near Battersea), was made of seven sheets of bronze riveted together with a corrugated rim that was extra strong and had free-moving handles attached. It was huge and the strips of metal that held the rim to the body were individually patterned. Around sixty Bronze Age cauldrons have been found in the UK, almost all of them in bodies of water; they may have been used to make offerings, or maybe they had some other purpose. Since there are no written records from this period, the precise

use of the 'Battersea Cauldron' will have to remain a mystery, though it would probably have been used for feasting rather than potion-brewing (sadly).



PART 2: LEECHBOOKS AND BEZOAR STONES

Some potions-related artefacts have grown in stature over time, and *Bald's Leechbook* is one of them. An old medical text from the 9th century, 'Bald' is actually the name of the owner of the book, which itself is named after leechdoms, a sort of medieval medicine. Medicine in Anglo-Saxon England was a mix of charms, remnants of classical theories and practice, folklore and faith-healing. As such, some of the ideas in the book appear bizarre.

For example, a modern doctor wouldn't advise mixing dog urine and mouse blood to get rid of warts, or that to counteract a snakebite you need to smear earwax around the wound and recite the Prayer of St John. Neither would your local vet suggest that pain in domestic animals might be caused by elves. And though midwives might still point out that a baby unborn after the tenth month could be fatal to the mother, they won't add that this is especially true on Monday nights!

'Now then, now then, now then,' said Slughorn, whose massive outline was quivering through the many shimmering vapours. 'Scales out, everyone, and potion kits, and don't forget your copies of Advanced Potion-Making...'

Harry Potter and the Half-Blood Prince

Incredibly, however, some of Bald's cures still hold true today. One of the recommended cures – involving leek, garlic, wine and part of a cow's stomach – was tested in 2015 and found to be as effective against MRSA as modern antibiotics. Likewise, a nettle-based ointment for muscle pain and a herb-based cough treatment are similar to ones sold in chemists and health-food shops today. The book's advice on how stitches will dissolve, what to use as an antiseptic and even how to perform surgery for a cleft lip indicate that in the Middle Ages people knew something about what they were doing and which herbs combatted which diseases. It was a well-travelled document, too, containing some of the best Mediterranean medicine from the 3rd to 9th centuries. Information was transmitted across borders and national boundaries that we know well today but that didn't exist in the Middle Ages. *Bald's Leechbook* would make a mean accompaniment to *Advanced Potion-Making*.



Harry bent over the Half-Blood Prince's book and turned a few pages with unnecessary force. And there it was, scrawled right across a long list of antidotes.

Just shove a bezoar down their throats.

Harry Potter and the Half-Blood Prince

Speaking of which, it's in the Half-Blood Prince's copy of *Advanced Potion-Making* by Libatius Borage that Harry learns what a bezoar stone is made from. Harry famously shoved a bezoar down Ron's throat when he drank some poisoned oak-matured mead intended for Professor Dumbledore.

Bezoar stones are masses of undigested fibres that form in the stomachs of certain animals, especially of the bezoar goat. Throughout the Middle Ages and early modern period they were considered a universal antidote to all poisons. In the real world, bezoar stones were often enclosed in gold filigree cases, showing that their owners (gentlemen, noblemen, kings and popes) were keen not to get poisoned, and were wealthy enough to own such exotic goods – even if the exotic good was essentially gunk from a goat's stomach.



Someone who wasn't as lucky as Ron was a French cook who, in 1567, had been condemned to hang for stealing some cutlery. Ambrose Paré, a barber-surgeon to the French monarchy, wanted to do a grisly experiment to see whether the bezoar stone was indeed an antidote to poison. He offered the cook a deal: instead of being hanged, he would

be poisoned, but he would also be offered the protection of consuming a bezoar stone. If he lived, he would go free. The cook was given a sublimate of mercury and, unfortunately, the bezoar stone offered no defence. He suffered great torment for seven hours, vomiting and emitting blood from his ears, nose and mouth. When Paré opened him up posthumously he found his stomach black and dry, as if it had been burned.

If there can be any justification for the brutality here, it's that it showcases a form of proto-science which is based on experimentation and observation rather than parroting Classical authors and texts. This was the development of the scientific method in action: learning through the observation of natural phenomena. Mind you, that wouldn't bring any comfort to that particular French chef.

'Let's try again. Potter, where would you look if I told you to find me a bezoar?'

Hermione stretched her hand as high into the air as it would go without her leaving her seat, but Harry didn't have the faintest idea what a bezoar was.

Harry Potter and the Philosopher's Stone

Bezoar stones crop up in many real-life old books and manuscripts; one of the most important of these is *The Compleat History of Druggs* by Pierre Pomet. Pomet was a traveller, collector, writer and medical researcher. His expertise led him to become chief druggist to Louis XIV, probably the most powerful monarch of the 17th century. He specialised in purveying exotic remedies from distant lands. Regarded as the most authoritative and comprehensive book on medicines of its time, *The Compleat History of*

Druggs was a source of fascination to curious readers as well as medical professionals.

In his book, Pomet is pretty specific in his recommendations about how to attain a bezoar stone – you could get one from a cow, but a goat bezoar stone was better. A really rare ape bezoar trumped them all. These were good examples of the kinds of items that were being brought back from (what were perceived as) far-flung regions by countries that were developing their empires in the Far East, India and South America.



PART 3: THE PHILOSOPHER'S STONE – AN ALCHEMIST'S TRUE CALLING

The ancient study of alchemy is concerned with making the Philosopher's Stone, a legendary substance with astonishing powers. The Stone will transform any metal into pure gold. It also produces the Elixir of Life, which will make the drinker immortal.

Harry Potter and the Philosopher's Stone

The Harry Potter series began with the search for one legendary object: the Philosopher's Stone. A substance with unique properties, it was believed to change other metals into gold and to produce the Elixir of Life, which would grant everlasting life to whoever drank it. As well as the subject of the first Harry Potter novel, it was the object of desire for alchemists throughout history and, as such, has been the feature of both scientific texts and works of art for centuries.

What the Philosopher's Stone is actually supposed to look like is unknown. What colour is it? Does it glow? Is it solid, or a residue of an experiment? Where do you keep it?

There is an amazing, richly illustrated artefact that explains how to best use the Philosopher's Stone: the Ripley Scroll. The Ripley Scroll is a six-metre-long alchemical treatise, covered in illustrations of dragons, toads and birds,

and including a text called 'Verses upon the Elixir'. When hung up, it is as tall as an adult giraffe, and there are only 22 known copies in the world. One is kept at the British Library. Another is kept at Yale University's Beinecke Library. They share iconography but portray the alchemical process in a different order. It's not certain which of these two scrolls on either side of the Atlantic would give you a better chance of producing gold.



The original scroll and its copies are named after the English mystic George Ripley, who was the canon (senior priest) of Bridlington Priory in Yorkshire, England, in the 15th century, and reputedly an alchemist. He wrote a book known as *The Compound of Alchymy*, but it wasn't until much later, in the 16th century, that people attributed to him the idea of making your own Philosopher's Stone.

If this mysterious scroll is unfurled and its instructions followed, you can learn how to turn base metal into gold and live forever. To be honest, people have been trying and failing to do this for centuries, so the chances of success aren't very high, but here we go...

Stage One:

At the head of the scroll is a red-robed, white-bearded figure who looks like the traditional European-American figure of Father Christmas. It's not him, sadly; the image is of the legendary Egyptian sage Hermes Trismegistus. He holds a huge alchemical vessel that's nearly as big as he is. Inside it are eight scenes, mostly showing wise men gazing into more alchemical vessels that contain human figures. Some of them look like they represent Adam and Eve. But there's a big picture in the centre - it's Hermes presenting a secret book to Ripley himself.

Stage Two:

Here, a large tree emerges from a pool of water, with snakes twisting around it. Adam and Eve are definitely represented in the pool this time. To a trained alchemist, this image is highly symbolic and informative: the tree represents knowledge; the snakes represent the Roman god Mercury; Adam represents the chemical sulphur, and Eve, the chemical mercury. At this stage of the scroll, a **white stone** is created.

Stage Three:

Beneath the white stone, a dragon is eating a toad. At the time the scroll was made, it was believed that toads were created spontaneously, rather than developing into tadpoles from eggs. The dragon and toad in this instance also spontaneously create a **black stone**.

Stage Four:

Here, a red lion and a green lion stand either side of a furious fire. Any alchemist worth his salt knew what this meant: that red sulphur and the ore from which essence of mercury is extracted are added to the black stone over heat, to create the **red stone**.

Stage Five (nearly there):

Here we meet the glorious golden bird, Hermes – like a golden eagle but with the face of a man wearing a crown. The bird represents regeneration and the powerful vapours created in the making of the stone.

Stage Six:

Finally – the Philosopher's Stone. It's represented as the three coloured stones: red, white and black. They're shown inside a bright burning sun, signifying gold, and circled by a crescent moon, signifying silver. The stones are held aloft by a dragon.

The final figure is of a man holding a giant quill pen. Perhaps this is Ripley. After all that, he must be exhausted.



If you've followed the instructions to the letter, you come up with three different-coloured stones in the course of the process: red, black and white. The colours of the stones have connections with the names of key characters in the Harry Potter series. The red stone has a connection to Rubeus Hagrid, whose name in Latin means 'red'; likewise the white stone to Albus Dumbledore, whose first name means 'white',

and the black stone to Sirius Black (for obvious reasons). Arguably, the three father figures of Harry Potter are bound together in the colours of the Philosopher's Stone.

There have been many reports of the Philosopher's Stone over the centuries, but the only Stone currently in existence belongs to Mr Nicolas Flamel, the noted alchemist and opera lover. Mr Flamel, who celebrated his six hundred and sixty-fifth birthday last year, enjoys a quiet life in Devon with his wife, Perenelle (six hundred and fifty-eight).

Harry Potter and the Philosopher's Stone

Whether you've managed to successfully create the Philosopher's Stone or not, someone who certainly did so in the wizarding world was Nicolas Flamel. In *Harry Potter and the Philosopher's Stone*, Nicolas Flamel has created one and hidden it in Hogwarts. There really was a Nicolas Flamel, who lived in Paris in the late 14th and early 15th century.

Supposedly, he never died, but it looks like he might have done because there's a tombstone with his name on it in the church of Saint-Jacques-de-la-Boucherie in Paris. The medieval tombstone is quite small, at just over 50 centimetres high – at its top is a scene showing Christ flanked by saints Peter and Paul, along with the sun and the moon. At the bottom is the dead body of Flamel. Flamel was said to have designed the tombstone himself and it was discovered some time in the 19th century in a Parisian grocer's shop, where it was being used as a chopping board.



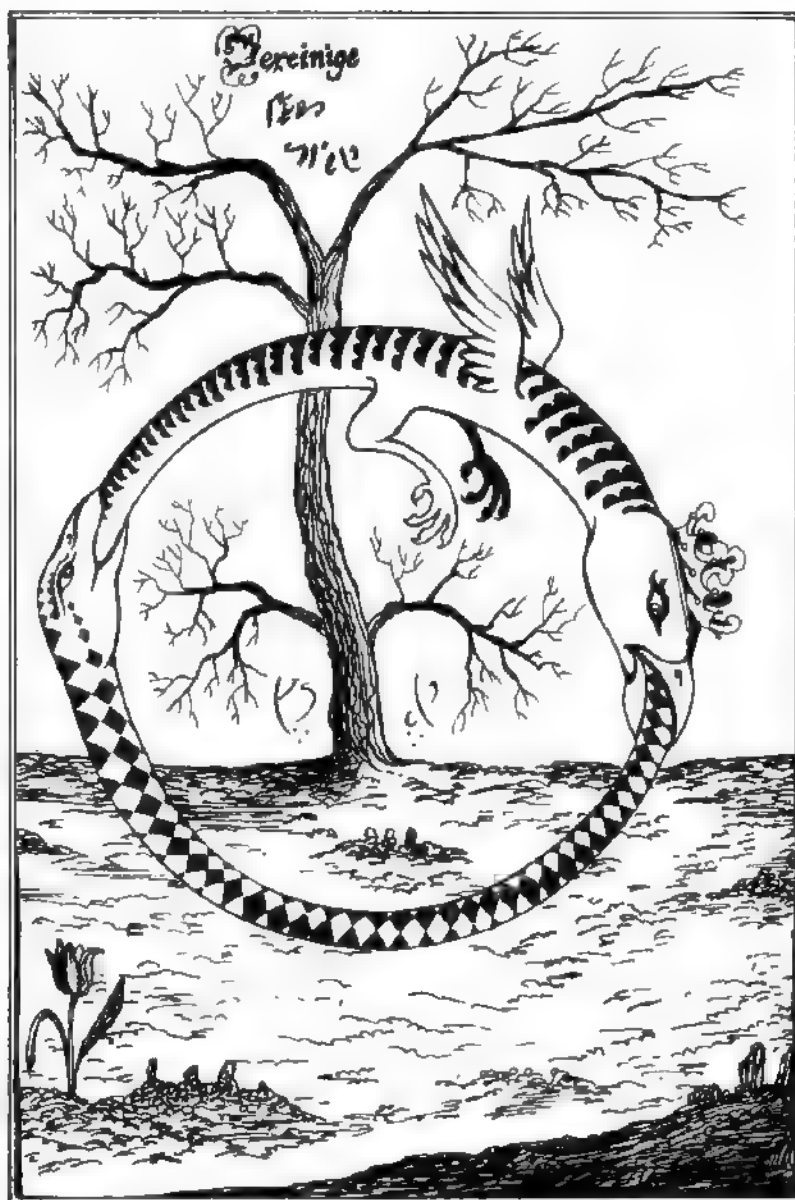
Soon after Flamel's death, stories and legends began to spring up around him. People claimed that his grave was dug up but there was no body inside. And the most popular one suggested that he was a book dealer who came across a mysterious and magical book, and that he made it his life's work to translate the text. The story was that after years of relentless study and travel he finally managed to unlock its powerful secrets. The legend of Flamel grew with each decade and saw him mentioned by Isaac Newton in his journals and Victor Hugo in *The Hunchback of Notre Dame*.

There is no evidence, however, to suggest that Nicolas Flamel was ever involved in the book trade. He was wealthy, certainly, but this was because he married a rich widow and

owned lots of property as a result: he was a landlord. He was also interested in commissioning large-scale tombs, which had various religious symbols on them, and in subsequent books written about his life these were interpreted as depicting alchemical experiments, such as how to make the Philosopher's Stone. His tomb commissions grew his own legend posthumously.

Books written later in the 17th and 18th centuries debunked the idea that Flamel was an alchemist, recovering documentary evidence such as his will, but, due to the way these books were illustrated, they only served to have the opposite effect. This mythologising of Flamel continues today – there are Flamel tours in Paris; there is also a street named after him and another after his wife, as well as a plaque. Not to mention the depiction of him in modern works of fiction, and films... Who knows what he'd make of it all if he had actually lived all this time?

According to legend, Flamel was instructed in a dream to seek out a book that would tell him how to make the Philosopher's Stone. The legend states that Flamel travelled to Spain to find a Jew who could help him translate the work, and that he came back with the knowledge to develop the Philosopher's Stone. A book first published in Germany in 1735 entitled *Uraltes Chymisches Werck* ('Age-Old Chemical Work') claimed to be a translation of this fabled book. It is full of strange alchemical symbols in different languages – principally Hebrew.



One of the most striking images in the book is of a serpent and crowned dragon eating each other's tails. This is a common alchemical symbol called an *Ourobouros*, symbolising the cycle of birth and death, and the unification of *prima materia* ('primary matter') with *spiritus universalis* ('universal spirit'). This unification was essential to making the stone. Despite the beauty of the illustrations, the fact remains that Flamel wasn't an alchemist and no one knows whether Rabbi Abraham Eleazar (named as the book's author) was a real historical figure. Indeed, it's extremely

unlikely that anyone has come upon the secret to eternal life by reading that book.

So why would anyone continue to read such a book when its contents are likely as fictional as the legends of the men who brought it into being? The answer lies in the compelling allure of magic, and the sense that magic is never false, but probably just poorly executed by the practitioner.

Neville had somehow managed to melt Seamus's cauldron into a twisted blob and their potion was seeping across the stone floor, burning holes in people's shoes. Within seconds, the whole class were standing on their stools while Neville, who had been drenched in the potion when the cauldron collapsed, moaned in pain as angry red boils sprang up all over his arms and legs.

Harry Potter and the Philosopher's Stone

We can't ever be completely sure we're not tapping into a power beyond our understanding, which resonates at some deeper level with how we perceive the world. It's no coincidence that much of this powerful information comes in the form of books – books themselves exert their own magical influence by the way they are interpreted and shared, and how they transform our knowledge of our surroundings, real and imagined. For that reason, books about magic are especially powerful. But you already knew that, didn't you?



'A stone that makes gold and stops you from ever dying!' said Harry. 'No wonder Snape's after it! Anyone would want it.'

Harry Potter and the Philosopher's Stone

One of the most beautifully made alchemical treatises ever is a copy of a book called *Splendor solis*. It was originally made in Germany in 1582 and copied many times.

The very first illustration is of an alchemist. He wears a vivid red robe and red hat and is wrapped in a glorious blue cloak. Using just one hand, he holds a large flask, which is filled with a golden liquid. Emerging out of the top of the flask is a black scroll, inscribed '*Eamus quesitum quatuor elementorum naturas*' - Latin for 'Let us ask the four elements of nature'.

For an alchemist, *Splendor solis* was essential reading, not for its wonderful art, but for the secrets it contained. Its writer was purportedly a scholar called Salomon Trismosin, who claimed to have used the Philosopher's Stone to conquer old age and who lived to be 150 years old. In reality, like many other alchemists, the true story of Salomon Trismosin is hidden in the mists of time, and *Splendor solis* was based on a patchwork of earlier sources.

Other illustration highlights include an incredible flask containing a phoenix, chariots flying through the sky pulled by dragons, and what looks like a man emerging from a swamp. And amid the kings, phoenixes and three-headed dragons is supposedly a cycle and methodology for attaining the Philosopher's Stone, which alchemists have pored over in the hope of uncovering its secrets.



Another magical book that has fascinated scholars for centuries is *The Book of the Seven Climes*. The manuscript dates from the 18th century but it was the work of a 13th-century alchemist from Baghdad called Abū al-Qāsim Muhammad ibn Ahmad al-‘Irāqī, also known as al-Sīmāwī, which means a ‘practitioner of natural or white magic’. Throughout the book are illustrations of alchemists at work amid kilns, with flasks and various liquids being heated up. One of them – including a goblin-like man in a red hat, heating a flask surrounded by various birds – looks a lot like a series of hieroglyphics. This image was supposedly taken from a ‘Hidden Book’ by the sage-king of ancient Egypt, Hermes Trismegistus, who you may recall was depicted at the top of the Ripley Scroll. It was believed that he had mastered the mysteries of alchemy and recorded them as hieroglyphs on the walls of tombs, which al-‘Irāqī had painstakingly interpreted.

In fact, the image has no alchemical significance whatsoever, but it does portray the now-lost monument of an Egyptian king. It is a historical moment snatched from oblivion, but one that is more significant to Egyptologists than to alchemists. It also shows how much our scientific methodology has changed over the centuries: today, we tend to explain processes in a strict, evidence-based fashion, whereas in the past we often interpreted symbols through a mystical prism.

‘You know, the Stone was really not such a wonderful thing. As much money and life as you could want! The two things most human beings would choose above all – the trouble is,

humans do have a knack of choosing precisely those things which are worst for them.'

Albus Dumbledore - Harry Potter and the Philosopher's Stone



However richly the process was depicted in scrolls, manuscripts and books, questions about the nature and purpose of alchemy continued to be posed in works of art over history. *The Alchemist* is an engraving based on the work of Pieter Bruegel the Elder, one of the most significant Dutch artists of the Renaissance, and was created at some point after 1558.

It depicts a poverty-stricken alchemist having one last throw of the dice at turning base metal into gold by using his last penny, taken from the now-empty purse his wife is holding. A scholar dressed in Italian clothes is reading books and giving instructions to the failing alchemist, but out of the window is a vision of the future as the alchemist's family is welcomed into the workhouse.

The print might be about the foolishness of the whole alchemical enterprise, but it was also a broader critique on people being taken for a ride by charlatans. Bruegel was showing how alchemy was being misinterpreted as a short-term drive for wealth and immortality. In an age when there were many problems with the Catholic church, the Reformation was beginning and Protestantism was emerging, the Philosopher's Stone represented the secrets of the universe and the essence of life's energy; a source of

salvation. Alchemy was about the higher truth, but it was often misused to low ends.

A second, huge painting called *The Alchymist* (with its subtle spelling difference) was an image of magic meeting science and was painted in the late 18th century by Joseph Wright of Derby in the UK. Resembling a religious painting, the grey-haired, bearded man at its centre could be a prophet bathed in celestial light, but his church is a laboratory and the heavenly glow is actually light from the chemical element he has discovered. It was based on a real historical event: the alchemist is Hennig Brandt in Hamburg, 1669, and he was attempting to discover gold. He was trying to do this by boiling urine of all things. Gold wasn't the result, but the element he did discover was phosphorous.



As glorious as the painting appears, the process was pretty disgusting. Brandt took 50 large buckets of urine (a thousand

litres!) and let it sit for a few weeks before boiling it down to a paste the size of a bar of soap. When the substance met the air it created the brilliant light and flame of the painting. The discovery took place a hundred years before Wright was born, but the instruments and clothing of the painting are contemporary with Wright: the setting was the past, but the science belonged to the future. The painting seems to deliberately create a tension between the religion in the surroundings, the science in the discovery and the magic in the alchemical search to transmute base materials to gold. Brandt's experimentation marked a significant step in the development of chemistry, through the workings of mystical alchemy.

'Hmm... What do you think, Harry?' said Luna, looking thoughtful.

'What? Isn't there just a password?'

'Oh no, you've got to answer a question,' said Luna.

'What if you get it wrong?'

'Well, you have to wait for somebody who gets it right,' said Luna. 'That way you learn, you see?'

Harry Potter and the Deathly Hallows



Of course, Harry Potter can count himself among the legions who sought the Philosopher's Stone, in order to stop it falling into the hands of Voldemort. Its most fierce gatekeeper was the massive, monstrous three-headed dog, amusingly called Fluffy.

It was standing quite still, all six eyes staring at them, and Harry knew that the only reason they weren't already dead was that their sudden appearance had taken it by surprise, but it was quickly getting over that, there was no mistaking what those thunderous growls meant.

Harry Potter and the Philosopher's Stone

J.K. Rowling illustrated the scene in 1991, six years before the publication of *Harry Potter and the Philosopher's Stone*, as she worked out her plan for the book. Harry meets Fluffy when he is tricked by Draco Malfoy into being in the school corridor after hours with Argus Filch on his tail. Slipping out through a locked door into an out-of-bounds part of Hogwarts, he comes face to face with the petrifying pooch. The illustration captures the terrified looks on their faces at the moment when Harry, Hermione, Ron, Neville and Gary encounter the dreadful dog. But who's Gary?

He was actually an early incarnation of Dean Thomas, who, in turn, got dropped from this scene entirely (as did Neville). J.K. Rowling's working drafts and early illustrations of the Harry Potter series bear a lot in common with recovered manuscripts from other points in history. Sometimes, as in this case, they point to a deviation or a change, and sometimes (as in the case of the early working draft of 'The Man with Two Faces', the chapter that concludes the first novel) they show just how complete her detailed vision was to begin with, and how little it changed on its journey to publication. These early drafts were never intended for preservation, but like the development of science in the alchemical treatises, J.K. Rowling's work-in-progress shows the development of her wizarding world.



Harry Potter and his friends

1991

**Pen and ink drawing of Harry and his friends by
J.K. Rowling (1991)**

Fluffy is a call-back to Cerberus, the Classical three-headed mythological beast and guard dog to the gates of hell, which Hercules had to capture as one of his twelve labours. The depiction of Cerberus and Hercules by Aegidius Sadeler II, engraver in the court of Rudolf II in Prague (made some time between 1586 and 1629), made the gates of hell look like a flaming brick prison. What's interesting about the image of Hercules dragging the dark, muscular, fanged beast in his left hand and the way it is composed is the angle. You're compelled to follow the action from right to left, as opposed to the conventional Western habit of reading left to right. This inversion could be because we are in the underworld, where logic, physics and, indeed, art are turned on their head.

What also links Cerberus to Fluffy and the Philosopher's Stone is that in capturing Cerberus and taking him to King Eurystheus (who was so terrified he immediately jumped into a large jar to escape), Hercules gained immortality by completing his penance. And just like Harry in his epic struggle to find the Philosopher's Stone, Hercules did so less through physical effort than through courage and strength of mind.



The Potions classroom is a pivotal setting in the Harry Potter novels for the development of the characters' brewing skills and also their own self-knowledge. Alchemy throughout history was about the transformation of base metals into gold and the promise of eternal life, but really it is about the journey of making something of your life and becoming who you are supposed to be.

Growing up and entering your teenage years is a tumultuous time for anyone, full of fears and desires, but this

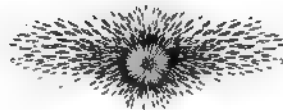
was particularly so for Harry, Hermione and Ron as they embarked on their journey into the wizarding world.



HERBOLOGY

Herbs are familiar to all of us. We grow them in gardens, see a dizzying array of them on supermarket shelves and use them to add all manner of flavours to recipes. But in the past, when most people lived in the countryside, the plants and herbs that grew all around them were nature's medicine cabinet. Herbology, the study of folk remedies and the use of plants, herbs and fungi as medical treatments, was practised and documented in scholarly books in many places on the planet. In this journey through herbology we'll see how this knowledge was compiled into a series of books called herbals, how these helped develop the science of modern medicine, and also how the myths around the magical properties of certain plants, such as mandrakes, persisted for many, many years.

Herbology is an important subject in the Harry Potter books, and becomes more central as the stories develop: from the Wolfsbane potion that alleviates the symptoms of Lupin's werewolf problem in *Harry Potter and the Prisoner of Azkaban* to the Gillyweed Harry uses to breathe underwater in *Goblet of Fire*. In order to make Polyjuice Potion (which, you'll remember, enables you to take on the appearance of another person), you need to pay attention in Herbology class, after all.



PART 1: GREENHOUSES, GARDENING TOOLS AND SOME 'HERBALS'

Professor Sprout was a squat little witch who wore a patched hat over her flyaway hair; there was usually a large amount of earth on her clothes, and her fingernails would have made Aunt Petunia faint.

Harry Potter and the Chamber of Secrets

Professor of Herbology, Pomona Sprout, was actually illustrated by J.K. Rowling in 1990, some years before the publication of *Harry Potter and the Philosopher's Stone*. In the drawing, Sprout is surrounded by all kinds of plants and cradles a cactus in one arm, while tendrils sneak out from a pot on the table. They might be sneaking around, looking for something to nibble.

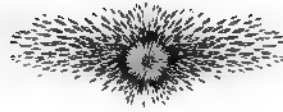


Pen and ink drawing of Professor Pomona Sprout by J.K. Rowling (30 September 1990)

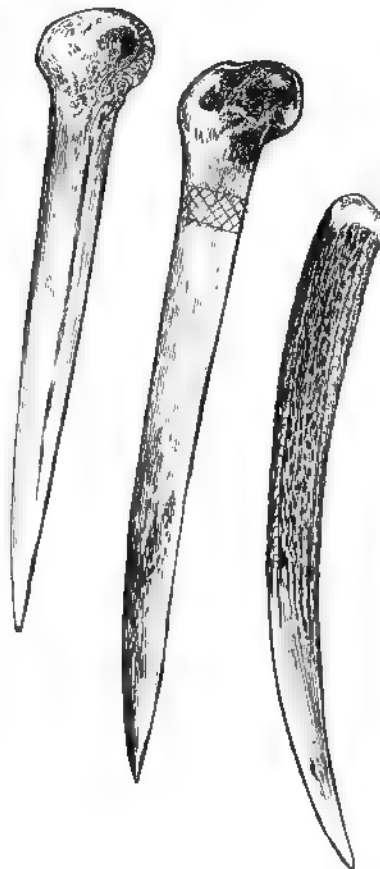
The plants are reminiscent of those you might find in gardens or around the English countryside, but with little twists that make them appear ever so slightly not of this world. The spider hanging off the witch's hat perhaps indicates how welcoming Sprout was to lots of different flora and fauna.

'Four to a tray - there is a large supply of pots here - compost in the sacks over there - and be careful of the Venomous Tentacula, it's teething.'

Professor Sprout - Harry Potter and the Chamber of Secrets



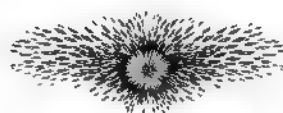
If you want to grow magic plants in your garden, then you need magical gardening tools. The Museum of Witchcraft and Magic in Boscastle, Cornwall, in Southwest England, has some examples of gardening implements made for magical sowing and harvesting. These are made of bone and antler, the latter in particular being a material that has huge symbolic importance. Tools shaped from antlers, which rise upwards, were thought to connect the earth with the higher spirit world, and because antlers shed and regrow, they also symbolised the magic of regeneration and renewal.



When it came to harvesting and digging up special and magical plants, it was important that the tools were formed

from natural resources so that they didn't corrupt the plants being harvested. There are many folktales about gardening: from making hot peppers hotter by planting them when angry, to guaranteeing a bountiful bean harvest by getting a pregnant woman to do the planting. Ritual and magic have an intimate connection with sowing and harvest, one born of a close relationship with nature.

At its most basic level, by finding out which plants were best ground or cooked together, people learnt about the processes of the natural world. A successful result often led to the process becoming ritualised, with people looking at the world around them and trying to understand how it related to them. Science and magic came out of the same search for knowledge about how the world worked.



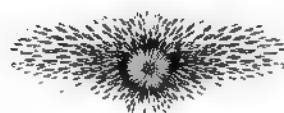
Three times a week they went out to the greenhouses behind the castle to study Herbology, with a dumpy little witch called Professor Sprout, where they learned how to take care of all the strange plants and fungi, and found out what they were used for.

Harry Potter and the Philosopher's Stone

Herbals have been around for centuries. They describe the appearance and properties of plants that can be used for preparing medicines. Back in the 12th century, medical practitioners would have been using a manuscript to study medicinal plants, but a medieval herbal included more than just plants and medicines; it occasionally gave you the

myths and legends associated with how they got their names – embellishments which gave them more flavour and character. The illustrations could also be pretty extraordinary, depicting battles with rabid dogs and men urinating into cups.

One such 12th-century herbal advises those afflicted with snakebite. It recommends *Centauria major* and *Centauria minor* – the ‘greater’ and ‘lesser’ centaury – which were plants named after the Ancient Greek centaur Chiron, renowned as a physician and an oracle, too. The Ancient Greek poet Homer described Chiron as the ‘wisest and justest of all the centaurs’. Chiron was also famous for his knowledge of botany, pharmacy and herbology. In this herbal, a beautiful line drawing depicts him handing the herb centaury to Asclepius, the god of medicine and healing. The herb’s healing properties for snakebite were represented in the diagram, as well as beneath the feet of the centaur and the god, as you can see a long snake slithering away.

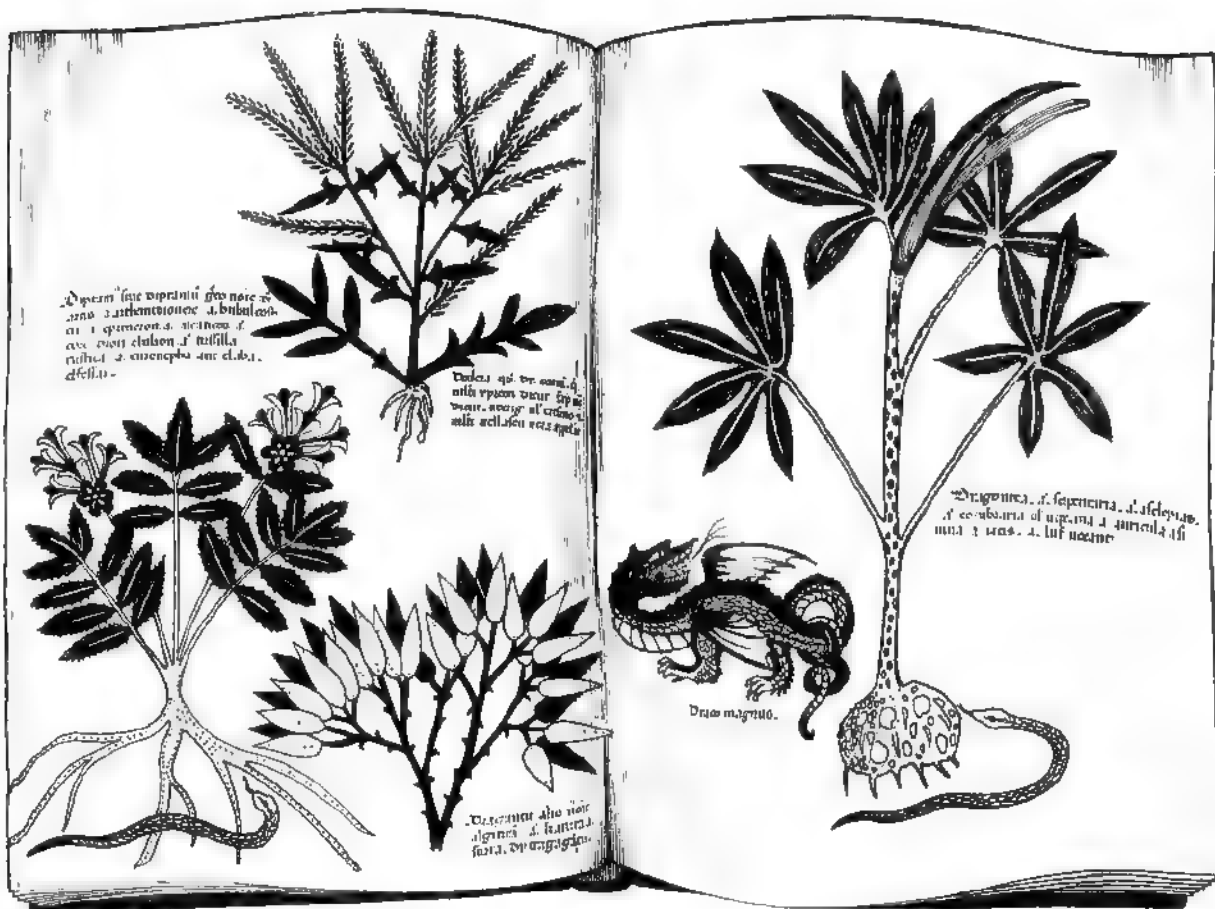


They had their Herbology exam on Wednesday (other than a small bite from a Fanged Geranium, Harry felt he had done reasonably well) [...]

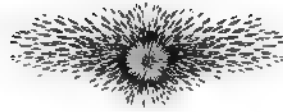
Harry Potter and the Order of the Phoenix

Another example of a herbal, from around about 1440 and made in Lombardy, has illustrations so rich in their form and decoration that it was clearly made for a very wealthy

patron. These illustrations include, among other things, a demon, a mouse, a cat above a corpse in a coffin, a horse castrating itself, an aphrodisiac, a hairy elephant and another man urinating into a pot.



One illustration is of snakeroot, and it's a beautiful descriptive painting of the plant. Beside it are some of the species' Latin names - '*dragontea*', '*serpentaria*' and '*viperina*' - which tell of the plant's ability to cure snakebites. All of these were names for the same plant. There is an image of a hissing green serpent curling around the plant's root and a snarling dragon with a forked tongue and elaborately knotted tail. More lavish books were made, intended less for use by the original owner than for ostentatious display, as a thing of wonder and magic.



John Gerard's herbal, also known as the *The Herball or Generall Historie of Plantes*, was first published in 1597. It was used by botanists and medical practitioners for over two hundred years.

Even though it bears Gerard's name, the book was largely based on the work of others – the text was a translation from a Flemish botanist and hundreds of illustrations are from a German work – only sixteen of the 1,800 woodcuts printed inside were original. Even while alive, Gerard was being accused of plagiarism. It was entertainingly written and a huge success, adding in the local colour of Gerard's observations of his own garden in Holborn, London. The botanical illustrations had all kinds of advice and information: marjoram can help people 'given to much oversighing' and basil 'taketh away sorrowfulness and maketh a man merry and glad'.

Some of the book's botany seems pretty off-the-mark to the modern reader. For example, the theory that Barnacle geese didn't come from eggs but grew on Scotland's island of Orkney might not stand up to too much questioning! People didn't know how migration worked, so it's an understandable hypothesis, testing out how the world might operate.

One of Gerard's sixteen new woodcuts was the potato – thought to be the earliest published picture of one. The then-strange and newly discovered plant generated plenty of excitement. It was a delicacy that only the rich could afford and there was talk about its potential medicinal uses: one being that carrying a potato in the pocket would cure rheumatism.

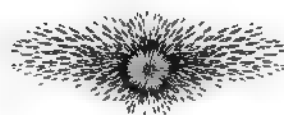
The copy of Gerard's book held by the British Library is full of fascinating annotations written by hand in the margins,

much like Harry's copy of *Advanced Potion-Making* in *Half-Blood Prince*. Because the book was principally about describing plants, and not a medical book, the owner added notes about the plants' medical uses, including mention of jaundice, worms and the like, which seem more detailed than someone using it merely as a home-remedies book. But we'll never really know the true identity of this mystery person in the margins.

Nobody else was looking. Harry bent low to retrieve the book and, as he did so, he saw something scribbled along the bottom of the back cover in the same small, cramped handwriting as the instructions that had won him his bottle of Felix Felicis, now safely hidden inside a pair of socks in his trunk upstairs.

This Book is the Property of the Half-Blood Prince

Harry Potter and the Half-Blood Prince



Harry, Ron and Hermione left the castle together, crossed the vegetable patch and made for the greenhouses, where the magical plants were kept.

Harry Potter and the Chamber of Secrets

There are medical texts throughout history that could happily have sat in Professor Sprout's greenhouses or on the shelves in Madam Pomfrey's hospital wing, but probably the most famous herbal medicine book in history is Nicholas Culpeper's.

Culpeper's herbal was first published in 1652, in English rather than Latin, to reach a wider audience: there have been over 100 editions and it has never been out of print. It was taken by pilgrims to the New World and was the first medical book published in North America. J.K. Rowling owns two editions: a beautiful copy gifted to her by her publisher Bloomsbury and a well-thumbed second-hand version she used while writing and researching the Harry Potter series. The book provided a comprehensive list of native medicinal herbs, indexed against specific illnesses, and prescribed the most effective forms of treatment and when to take them.

Nicholas Culpeper – botanist, herbalist, physician and astrologer – had an extraordinary life. He was shot during the English Civil War while fighting for the Parliamentarians, his lover was struck dead by lightning as they tried to elope and he was put on trial for witchcraft. He is remembered for being a radical medical revolutionary.

He set up as an apothecary in London, creating potions and medicines based on plants and herbs that could be found in the English countryside. He shared his knowledge of natural remedies freely, putting him into conflict with the College of Physicians. They had a monopoly on practising medicine within the City of London and disliked Culpeper's interventions.

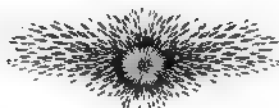
Culpeper set up just outside the City walls in the Spitalfields area (outside the jurisdiction of the College of Physicians) and worked incredibly hard – seeing up to forty patients in a morning and charging little or no money for it. He pioneered an early kind of free health service.

He was scathing of other physicians' methods. A lot of their diagnoses relied on examining urine, sometimes

without even seeing the patient personally. He wrote that proper investigation 'is a better way to find the disease than viewing the piss, though a man should view as much piss as the Thames might hold'.

Culpeper advocated natural remedies, but also turned to astrology, believing that the planets could cure different parts of the body: Saturn the spleen, Jupiter the liver and Mars the gall, and, of course, Venus 'the instruments of Generation'. In doing so, he innovated a form of medical astrology: he listed the types of herbs and plants to be used for certain cures and in turn related those to the stars, to say what time of year or month was best to take them for the best effect. He saw traditional medicinal practices and astrology as intertwined.

Maybe the mix was a little *too* dangerous, however, because he was accused of witchcraft by a patient who claimed to be wasting away after consulting him, and Culpeper was imprisoned. He was acquitted, but his use of astrology and his antagonism of the medical establishment marked him out as trouble. Unperturbed, he continued his practice and his herbal was published ten years later.



PART 2: FLOWER PRESSING, FLOWER TEMPLES AND STINK LILIES

'Oh, hello there!' Lockhart called, beaming around at the assembled students. 'Just been showing Professor Sprout the right way to doctor a Whomping Willow! But I don't want you running away with the idea that I'm better at Herbology than she is! I just happen to have met several of these exotic plants on my travels...'

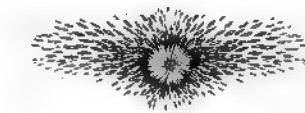
Harry Potter and the Chamber of Secrets

Flower pressing, or preserving flowers by placing them between sheets of paper and then drying them out by applying a large weight, has been a popular hobby among children and adults alike for centuries. The oldest existing book of dried flowers – or *herbarium* – was created by Gherardo Cibo, who made it while studying at the most advanced botanical garden in Europe, in Bologna, Italy.

In his early years he travelled widely between Rome, Germany, Spain and the Low Countries, but around the year 1540, at the age of 28, Cibo settled in Rocco Contrada, then a flourishing Italian city with a burgeoning academic reputation. Here, he also made a visual diary of his plant-collecting excursions – with superb, and unusual, illustrations. The plants, often in the foreground, tend to

dwarf any people set alongside them. The scale is all over the place, as botanists hack at the roots of giant snowdrops, a lily towers over a walled village and a wild peony is the largest plant in a forest with birds flying among its petals.

Cibo was nonetheless praised for his observations and artwork. He was part of a movement in Renaissance botanical science: a period of collecting specimens (in some cases bringing them back home for cultivation), as well as discovering and identifying vast numbers of new species or subspecies of various plants. Cibo is representative of a time when people were trying to find out about the world through scientific discoveries, but when many botanical matters were still misunderstood or not understood at all – a time when science, magic, tradition, mythology and folklore were still very much mixed together.



While Cibo's quirky illustrations were an exaggeration of the plants he saw in the Italian countryside, the *Hortus Eystettensis* of the early 17th century is an extraordinary record of a very particular garden: the garden of Eichstätt in Bavaria, Germany.

Commissioned in 1611 by Johann Konrad von Gemmingen, Prince Bishop of Eichstätt, the *Hortus Eystettensis* is a magnificent catalogue of plants grown in the bishop's palace garden. It contains the finest botanical drawings of their time and set the standard as to how botanical drawings should be done.

Eichstätt was the first botanical garden in Europe outside Italy and the bishop decided he wanted to record his spectacular garden by publishing a book that included every single species in it – a massive undertaking for a garden with over a thousand plants. It took so long that the bishop

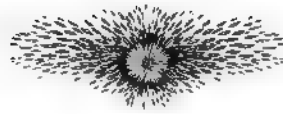
died before it was completed. The book was finally published a couple of years later, in 1613, and is sometimes referred to as the *Florilegium*, which is Latin for 'a gathering of flowers'.

The man in charge of this huge project was Basilius Besler, a horticulturalist and an apothecary, which meant he understood the plants like a gardener but also knew their medicinal properties. He was effectively the project manager, being neither the writer, nor the artist. Harry may have forgotten the hellebore in his Draught of Peace, but it was well known to Besler, who cultivated several varieties in the garden, one of which was *Helleborus niger* (black hellebore), used as a medicine since antiquity, although today it is considered a poison.

The book was hugely expensive to produce and there were many wrangles about cost between Besler and the bishop's diocese, but Besler saw it as a means to make some money! There were two different editions: one was black and white with explanatory text, and cost 35 florins. The other had no text, was hand-coloured and cost an eye-watering 500 florins (over \$ 70,000 or 60,000 Euros in today's money).

The exorbitant cost of the hand-coloured edition didn't put off Duke August of Brunswick-Lüneburg, though, who was so impressed that he not only bought the expensive copy for himself, but also further copies for family and friends. Overall, the book was a huge success and enabled Besler to buy himself a large house in a fashionable district of Nuremberg. The house cost 2,500 florins – the price of five coloured copies of his *Hortus Eystettensis*.

It was clearly a huge aesthetic success, but it is hard to exaggerate the importance of this book in terms of botanical illustrations. Its level of observation was outstanding, but it also captured the medicinal and scientific importance of the plants – all in one magnificent, ground-breaking book.

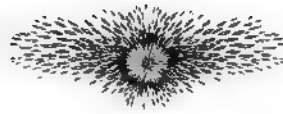


While Gherardo Cibo might have been busy flower pressing back in 16th-century Italy, 17th-century English botanist John Evelyn took it to a whole new level in his *Hortus hyemalis*.

Evelyn was someone who involved himself in a vast and varied array of ventures: he kept a diary at the same time as his friend, the world-famous diarist Samuel Pepys; he was a founding member of the Royal Society; wrote an influential pamphlet on the problem of pollution in London; published a seminal paper on forest management and conservation; discussed architecture with Christopher Wren and introduced the word 'avenue' into the English landscape. He even brought the first written record of a salad dressing made with olive oil into the UK. Yet flowers and plants seem to have held a special place in his heart.

Evelyn was often described by his contemporaries as 'a great projector', which is a term that denotes someone who is pursuing great projects. Evelyn always had a big project on the go, and one of these was to create an encyclopaedic history of gardens and gardening. He spent much of his lifetime compiling this.

He developed his interest in botany, and created the collection, in Padua, Italy, where he took samples from the city's public botanic garden. As such, it is a very accurate and closely observed book of plants, which is part of the same process as the naming, itemising and categorising involved in his other great project, the encyclopaedic history of gardens (which, like many of Evelyn's projects, remained unfinished). But, along with others across Europe, he laid the foundations for future generations to explore plants and gardens. Samuel Pepys was impressed, and judged *Hortus hyemalis* 'better than any Herball'.



His heart sank. He had not added syrup of hellebore, but had proceeded straight to the fourth line of the instructions after allowing his potion to simmer for seven minutes.

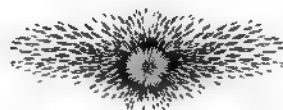
Harry Potter and the Order of the Phoenix

For hundreds of years, apothecaries, professors and ardent students continued to press and preserve plants in 'dried gardens' (*horti sicci*) – around the turn of the 18th century, loose-leaf pages became the preferred means for preserving plants and recording their data, allowing for rearrangement and easy comparison.

This also meant that the classification of plants was a big source of debate in the 17th and 18th centuries – plants were often known by their local common name, but that varied in different parts of the world and even different parts of the same country. Botanists used Latin names – but they were long and descriptive and also varied from place to place, or even person to person. In the end, the system developed by Swedish botanist, physician and zoologist Carl Linnaeus was universally adopted. The Linnaeus system was a revolutionary taxonomic system and an ordered scientific way of naming things.

It's known as binomial nomenclature. In other words, it was a 'two-name system'. There was a genus and a species name. So, for example, *Homo* is the genus, *sapiens* the specific name. The same as genus *Tyrannosaurus*, specific name *rex*.

In the case of the flower *Adonis vernalis*, or fake hellebore, the genus is *Adonis* and the specific name *vernalis*. The plant contains toxic substances, but the above-ground parts were used in folk medicinal remedies for fever and intestinal worms. It originally takes its Latin name from Adonis in Greek mythology – a mortal man so beautiful that the goddess Aphrodite fell in love with him. When he was killed by a wild boar, Aphrodite wept and her tears transformed into the Pheasant's-eye's golden bloom. It is difficult to shake colloquial names for plants, and people still call it 'Pheasant's-eye'. However, Linnaeus's naming system has dominated horticulture for over two hundred years – and in developing it, he used a system of separate specimens on unbound papers.



A beautifully illustrated 19th-century manuscript from China called *Du Cao* deals in depth with the topic of poisonous and medicinal plants. In it, there is a fascinating plant known as 'devil's tongue' or the 'voodoo lily', of the same genus as Titan Arum, which is known as the foulest-smelling plant on the planet. Like Titan Arum, it reeks of rotting carcass.

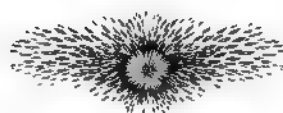
The left-hand side of one of the pages in *Du Cao* is covered in Chinese characters, while the right has a superb illustration of the flower. On one such page there's a large single leaf with a red interior that collars a single upright purple spike called a *spadix*. The flower's Latin name was *Amorphophallus konjac*. *Amorpho* means 'misshapen' and *phallus* means 'penis'...

The plant is still used today in dietary supplements, noodles and exfoliating sponges. The roots of Chinese medicine go back thousands of years; its origins are

mythical and the traditional story is that it all started with a fabled ruler, called Shen Nong.

Shen Nong was a 'divine farmer': a mythical sage ruler who lived about four to five thousand years ago. He is credited with being the inventor of agriculture and of medicine, and with being the man who dug the first well, encouraging mankind to plough the fields for the first time and transform into an agrarian community. He was meant to have compiled the first book on the subject, the *Bencaojing*.

The writer of the text on the devil's tongue in *Du Cao* is not known, but they were keen to acknowledge the debt they owed to their forebears, quoting previous works which mentioned the plant and emulating the Chinese medicinal tradition.



Lily waited until Petunia was near enough to have a clear view, then held out her palm. The flower sat there, opening and closing its petals, like some bizarre, many-lipped oyster.

Harry Potter and the Deathly Hallows

Descriptions of the 'stink lily' or, more romantically, 'dragon arum', can also be found in Elizabeth Blackwell's *A Curious Herbal*, first published in weekly instalments between 1737 and 1739. The book was a labour of love.

When she was twenty-eight, Elizabeth married Alexander Blackwell, whom she was unswervingly loyal to throughout their marriage, despite her feckless husband being nothing but trouble. Chased out of Scotland after falsely claiming he

was a doctor, Alexander set up in London as a painter. But he hadn't served a proper apprenticeship, so he was fined, couldn't pay the sum and ended up in a debtor's prison.

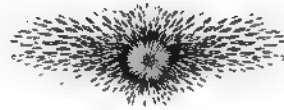
Elizabeth was left to look after herself and their child, but she was also determined to raise the money to free her wastrel husband. Elizabeth was extremely resourceful. She spotted a gap in the market for an up-to-date herbal reference work for apothecaries, one that included plants that were newly arriving from North and South America.

Having received art training when she was young, she set herself up in rooms next to the Chelsea Physic Garden, where London's greatest collection of medicinal botanical species was found at the time. She began to draw its plants and then took the artwork to the debtor's prison, where her jailed husband could identify and name them in several different languages. Elizabeth didn't stop there. She engraved the copper plates for printing and hand-coloured each of the printed images: this process normally took three different highly specialised craftspeople. She even engraved the text next to her illustrations. The etchings had to be done in reverse, and Elizabeth Blackwell did it beautifully. It contained 500 images of 'the most useful plants, which are now used in the practice of physick'.

The book took four years but was a triumph both artistically and as a practical apothecary's reference book. Elizabeth turned out to be an excellent businesswoman, negotiating deals with booksellers and arranging all the publicity herself. Ultimately, she paid her husband's debts and he was freed. She had achieved her goal – but prison did not reform her husband. Alexander soon racked up more debts and Elizabeth was forced to sell part of the herbal's publication rights to raise more money. Alexander then abandoned his family to seek his fortune in Sweden.

Even then, Elizabeth continued to send him his share of the herbal's royalties, though they never met again. Alexander became embroiled in a political scandal and was

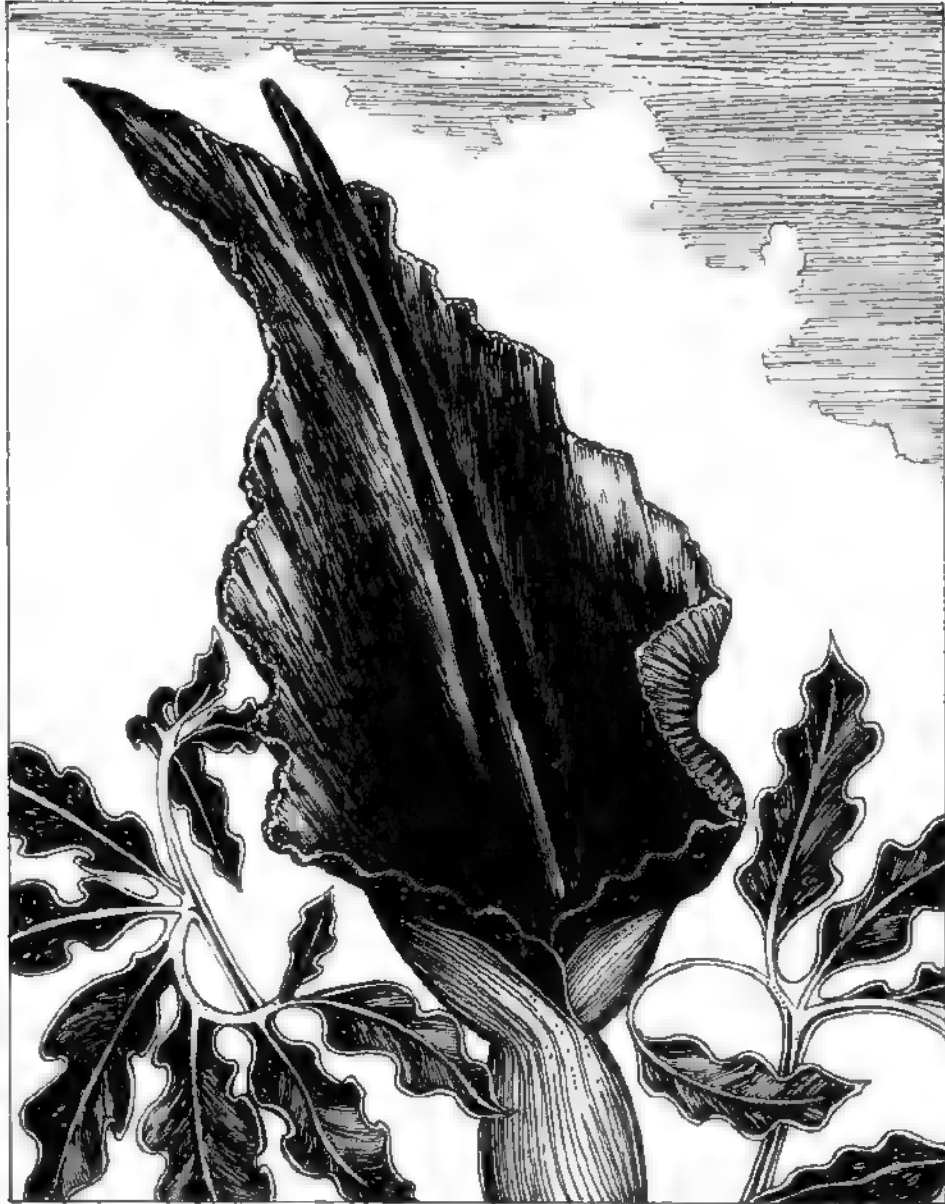
executed in 1748, and Elizabeth died ten years later. So this classic of botanical illustration is also a story of doomed love.



And so the three witches and the forlorn knight ventured forth into the enchanted garden, where rare herbs, fruit and flowers grew in abundance on either side of the sunlit paths.

The Tales of Beedle the Bard

Another image of a 'stink lily' can be found in a botany book that's known as a 'magnificent failure': Robert John Thornton's *Temple of Flora*, published in London between 1799 and 1807. His image of the lily has a large dark purple leaf curling and cupping a dramatic spike, which points to a sky full of foreboding thunder clouds as a volcano throws a streak of orange lava into the grey firmament. The book contains twenty-eight highly theatrical paintings of plant life across the world. However, it's not exactly a scientific work.



The depiction of the dragon arum was typical of the melodramatic backdrops he used to depict his plants, and of the Romantic period in which he lived. The dramatic tableaux resemble more fictionalised paintings than faithful scientific reproductions.

All the images are outstanding artworks, but all of them have an element of the bizarre. There are churches, windmills and Classical temples in the background, and a depiction of a 'queen plant' even has Cupid firing an arrow

at it. Robert John Thornton came from a wealthy family and intended to go into the clergy, but he switched from the church to medicine and botany. The images represented his passion for plants, as well as his philosophical principles.

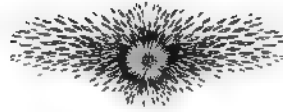
Thornton was morally conservative, had fervent religious beliefs, royalist passion and disgust for the French Revolution. He was determined to depict God's power in all things, and the essence of God within the plants of the natural world. Perhaps this is why he got sidelined by an obsession with the reproduction of plants, with the real title of the work being *The New Illustration of the Sexual System of Linnaeus*, which was then reduced to *The Temple of Flora*.

Carl Linnaeus's binomial system for naming plants was based on their reproductive organs, which was shocking for many people at the time. Linnaeus's writing was considered pretty racy, with flower leaves that 'serve as bridal beds which the creator has so gloriously arranged'. As a response, Thornton wanted *The Temple of Flora* to serve as a symbol of his belief in God's aim for conjugal fidelity within families, and that reproduction and sexual experience should only take place within marriage. In the process, he definitely got carried away with all the imagery.

Because of his insistence on trying to mix too much symbolism into his book of botany, Thornton tended to lose the meaning of the plants entirely. That's one of the reasons why it proved a commercial failure, combined with the fact that the higher taxes brought about by the war with France meant that the wealthy Englishmen of the time had less disposable income for such an expensive book. Thornton had inherited a large fortune, but the strange, beautiful book he had created was so expensive to produce that his family was left almost destitute when he died. Ironically, the 'visually magnificent failure' is now one of the world's most sought-after botany books.

'Careful, Weasley, careful!' cried Professor Sprout, as the beans burst into bloom before their very eyes.

Harry Potter and the Prisoner of Azkaban



PART 3: MANDRAKES AND GNOMES

'Mandrake, or Mandragora, is a powerful restorative,' said Hermione, sounding as usual as though she had swallowed the textbook. 'It is used to return people who have been transfigured or cursed, to their original state.'

'Excellent. Ten points to Gryffindor,' said Professor Sprout. 'The Mandrake forms an essential part of most antidotes. It is also, however, dangerous. Who can tell me why?'

Harry Potter and the Chamber of Secrets

Until Harry Potter stepped into Hogwarts, most people had forgotten about mandrake plants, but for thousands of years mandrakes were revered, thought to have mysterious properties and sought out as cures for everything from fertility problems to insanity.

Mandrakes are native to the Mediterranean region and the Himalayas, and the mandrake root can often look a lot like a human being, with little arms and legs. The root is where the magic lies.

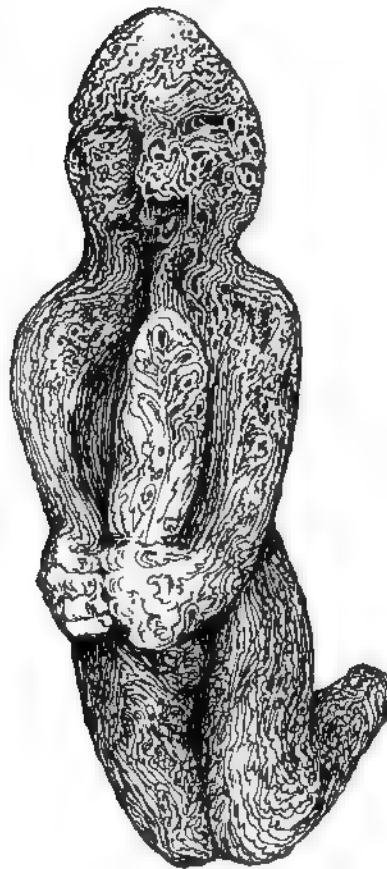


Instead of roots, a small, muddy and extremely ugly baby popped out of the earth. The leaves were growing right out of his head. He had pale green, mottled skin, and was clearly bawling at the top of his lungs.

Harry Potter and the Chamber of Secrets

One mandrake root (some three hundred years old) is kept in the collection of the Science Museum in London and it is disturbingly human-like in appearance. It seems to depict a bearded male figure kneeling and clasping a club. It is easy to understand why people believed that mandrakes screamed when they were uprooted.

A big mandrake root was highly prized. If you put it under your pillow, it was supposed to help fertility. When mixed with wine it was an anaesthetic and could also cure earache and gout. Carrying mandrake in your pocket brought you luck and gave you the power to influence others. Back in the 16th century, fake mandrakes were sold for huge prices by con artists. But mandrakes are in fact toxic: they are a member of the deadly nightshade family and contain highly poisonous compounds. They can numb pain but can also put you in a coma or lead to asphyxiation, never mind the associated hyperactivity and hallucinations.

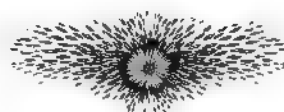


A mandrake couple appear in a 14th-century Arabic manuscript version of a book called *De materia medica* ('On Medical Material'), originally written in Greek by Pedanius Dioscorides, a botanist and pharmacologist who worked in the Roman army, in the 1st century AD. The translation is typical of the flow of knowledge into modern Western culture from the Ancient World, particularly with Roman, Greek and Arabic influences.

Dioscorides' work is in five volumes and covers about six hundred plants, alongside some animals and minerals – he describes how you can make around a thousand medicines from these. It was widely read for 1,500 years, and the dozens of surviving copies suggest that the book was copied many times and had a practical use for a long time.

The Arabic version only covers books three and four of *De materia medica*, but the manuscript has 287 illustrations of

plants, together with blank spaces for a further 52 illustrations. One of the illustrations is of the male and female mandrake. Unlike in some other illustrations of mandrakes, the roots do not have human heads – they look like plants. But each root has four ‘branches’, which look like two arms and two legs; half a dozen green leaves sprout from their ‘heads’. Tempting as it might be to call these a ‘mandrake’ and a ‘womandrake’, that would be inaccurate, since there aren’t two sexes of mandrake; modern botanists have identified these as being different subspecies of a mandrake, both native to the Mediterranean.



Hermione’s hand narrowly missed Harry’s glasses as it shot up again.

‘The cry of the Mandrake is fatal to anyone who hears it,’ she said promptly.

‘Precisely. Take another ten points,’ said Professor Sprout. ‘Now, the Mandrakes we have here are still very young.’

Harry Potter and the Chamber of Secrets

Now it’s clear what a mandrake does, how do we go about getting one? Luckily, there’s a manuscript to tell us, with a marvellous illustration of a complicated way to harvest a mandrake, in Giovanni Cadamosto’s *Illustrated Herbal*, made in Italy or Germany in the 15th century.

As we know from Harry Potter, harvesting a mandrake is a tricky business.

'Everyone take a pair of earmuffs,' said Professor Sprout.

There was a scramble as everyone tried to seize a pair that wasn't pink and fluffy.

'When I tell you to put them on, make sure your ears are completely covered,' said Professor Sprout. 'When it is safe to remove them, I will give you the thumbs-up. Right - earmuffs on.'

Harry Potter and the Chamber of Secrets

People knew the dangers of hearing the cries of the mandrake. The illustration in Cadamosto's herbal didn't contain magic earmuffs but revealed a ritual that would fit right in to a Hogwarts Herbology lesson. It's a strange process involving a dog, an ivory stake, a rope, a horn and earth-filled ears. The earth in the ears prevented the man attempting to harvest the mandrake from being affected by its scream. The mandrake, or Mandragora, was depicted naked with long hair and a beard, with leaves springing out of his head. The rope was attached to one end of the mandrake and the other end of the rope to a dog. At the sound of the harvester's horn, the dog would be startled and bolt, dragging the mandrake out of the ground with him. The horn and earth combined should protect the ears of the man so he doesn't hear the screams of the mandrake at all.

This basic method of harvesting a mandrake was common knowledge, though some believed that demons lived in mandrake roots and that hearing their scream wouldn't just kill you, but send you straight to hell. Others thought the sound would drive you insane. In most cases it was said that the poor old dog, forced to hear the mandrake's shrieks, died.

These harvesting stories might have been put about by professional mandrake collectors to scare off their rivals because the mandrakes were so precious. It's certainly true that myth, magic and mandrakes belong together more than with any other plant. Cold comfort, perhaps, to the patients in the Middle Ages who were administered mandrakes as an anaesthetic during amputations.

Just how the myths of the dangers associated with mandrakes persisted, when people had been pulling them up for centuries without any harm coming to them, is a mystery. But it's most likely that the hallucinogenic properties of the plants and its human shape got minds racing.



'How few wizards realise just how much we can learn from the wise little gnomes – or, to give them their correct name, the Gernumbli gardensi.'

'Ours do know a lot of excellent swear words,' said Ron, 'but I think Fred and George taught them those.'

Xenophilius Lovegood - *Harry Potter and the Deathly Hallows*

In the wizarding world, gnomes are pests that get swiftly out of hand if left unchecked. But a catalogue from the Ludwig Möller Garden Company of Germany, back in 1897, depicts an array of gnomes that Muggles were happy to welcome into their gardens.

As early as the Renaissance, a Swiss alchemist, Paracelsus, wrote of 'diminutive figures two spans in height who did not like to mix with humans', while at the same time garishly painted metre-high figures were often placed in wealthy people's gardens. By the 18th century, gnome-like statues called 'house dwarfs' were popular.

In the 1870s, a company called Griebel started to produce gnomes based on existing local myths: legendary magical gnomes that were said to live underground during the day, guarding their treasure. Only at night would they emerge. But if they were caught in the sun, they'd turn to stone: the original garden gnome statue.

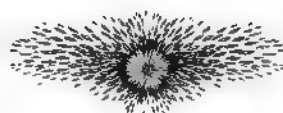


The Ludwig Möller catalogue displays the type of gnome advertised in the late 1800s: a selection of cheerful, bearded men in red hats smoking pipes, holding garden tools, even caring for a hare. Garden gnomes spread rapidly

throughout Germany before running amok in France and Italy.

They had only gone a few paces when Hermione's bandy-legged ginger cat, Crookshanks, came pelting out of the garden, bottle-brush tail held high in the air, chasing what looked like a muddy potato on legs. Harry recognised it instantly as a gnome. Barely ten inches high, its horny little feet pattered very fast as it sprinted across the yard and dived headlong into one of the Wellington boots that lay scattered around the door. Harry could hear the gnome giggling madly as Crookshanks inserted a paw into the boot, trying to reach it.

Harry Potter and the Goblet of Fire



Production of gnomes continues to this day in August Heissner's business in Gräfenroda, Germany. Heissner is often credited as the inventor of the garden gnome. A typical late-19th-century gnome from one of the workshops there would have had all the traits we now associate with them: from a beard through to lederhosen and a fishing rod. This is how Ron describes the craze for Muggles owning such garden gnomes:

'Yeah, I've seen those things they think are gnomes,' said Ron, bent double with his head in a peony bush, 'like fat

little Santa Clauses with fishing rods...'

There was a violent scuffling noise, the peony bush shuddered, and Ron straightened up. 'This is a gnome,' he said grimly.

'Gerroff me! Gerroff me!' squealed the gnome.

Harry Potter and the Chamber of Secrets

The first gnomes to come to the UK were brought over by Sir Charles Isham who, in the middle of the 19th century, bought twenty-one German terracotta gnomes, made by Philip Griebel – also based in the gnome-manufacturing heartland of Gräfenroda – and took them to his large gardens in Northamptonshire.

Isham was a rich eccentric who spent a lot of his time and money creating a huge alpine garden at his home. He personally created a rocky landscape of small caves and crevices. There were dramatic slopes, divided by cascades of rocks that artfully tumbled down into a chasm. And in this dramatic scene the gnomes roamed freely.

So, depending on your point of view, Sir Charles Isham is either the champion of the garden gnome and responsible for their popularity in gardens throughout the UK, or the man to blame for tacky garden statues that ruin perfectly respectable neighbourhoods. It's fair to say, gnomes divide people.

On the one hand they are incredibly popular – it's estimated that there are around five million merry little garden gnomes in the UK. On the other hand, the divisive little characters have been banned from the prestigious Chelsea Flower Show in London.

Similarly, in Germany, home of the gnome, there's a happy, thriving population of 25 million. But in the 1960s in gnome-central, Gräfenroda, gnome production was banned

for a time. The East German authorities felt gnomes 'didn't fit into a socialist society'.

Who wouldn't want a little humanoid living under their bushes and looking after their house and garden? Whether in a huge garden or a tiny window box, a garden gnome is a magical creature anyone can take care of.



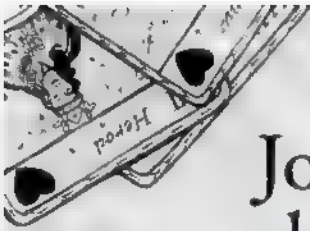
Down the centuries, plants were used for medicine as much as they were for myth-making and magic. Harry Potter might have forgotten to add hellebore to his Draught of Peace, but the proliferation of herbals in the 17th century and beyond ensured that the properties of the plants were understood very widely. Botanical books were often labours of love – literally so in the case of Elizabeth Blackwell's – and often of rigorous study, such as the one based on the garden of the Bishop of Eichstätt. Some depictions of plants were highly accurate and scientific, while others veered into the Romantic, only demonstrating all the more the grip they had on the creative imagination of people in the 18th and 19th centuries.

Botany is a fascination that endures – even if we don't rely on plants like we used to for medicinal purposes, they are still used the world over. But while some pesky creatures associated with herbology, like the gnomes of the wizarding world, still sit in our gardens, mandrakes had long receded in our memories before the Harry Potter stories brought them back into popular consciousness.

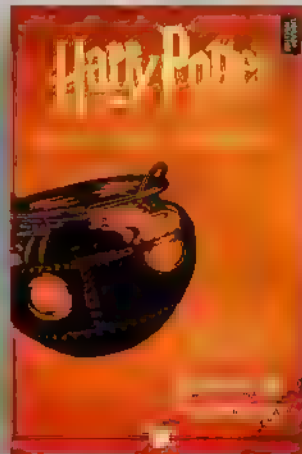
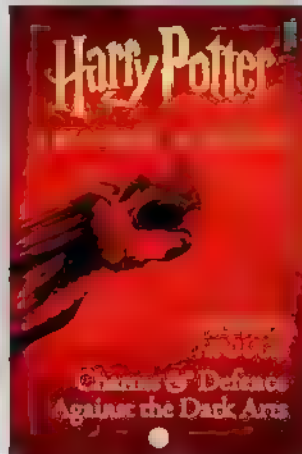
Herbology was, historically, an area of study for the rich but was also essential to the poor. For Harry, it is a subject which has a bearing on some of his key decisions – and mistakes. Pomona Sprout was named for the Roman

goddess of abundance, and Herbology lessons certainly prove fruitful for Harry, Ron and Hermione.





Journey further into the history of magic

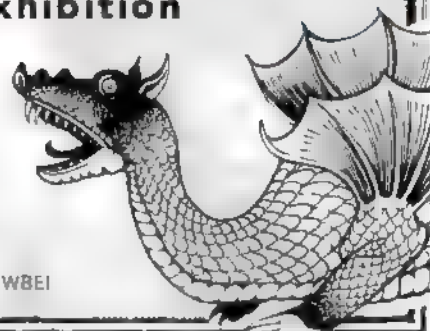


**Inspired by the *Harry Potter*:
A History of Magic exhibition**



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